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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tony Amato

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EXAMINER

ALLEN, CAMERON J

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/522,910	<b>Applicant(s)</b> AMATO, TONY	
	<b>Examiner</b> CAMERON J. ALLEN	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 36-68 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 36-42, 44, 46-49, 55-58, 64, 66 and 68 is/are rejected.
- 7) ☒ Claim(s) 43, 45, 50-54, 59-63, 65 and 67 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 36-68 have been considered but are moot in view of the new ground(s) of rejection. New rejections are necessitated by amendment.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 57, 58, and 64 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelly WO 00/58224.

Regarding claims 57 and 64, Kelly discloses a fluid processing apparatus for use in an elongate passage, the apparatus comprising a operating device for applying ultrasonic energy to fluid within the passage, said operating device comprising: an extender element (figure 1 #8) for projecting an operating member into said elongate passage, said apparatus further comprising flushing means for directing cleaning media for flushing detritus from said extender element. (Supply nozzle 5 for flushing means)

Regarding claim 58, Kelly discloses an apparatus according to claim 57, wherein said flushing means comprises one or more nozzles provided at or adjacent said extender element. (Supply nozzle 5 for flushing means)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 36-42, 44, 46-49, 55, 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rawson Francis EP 0 648 531 B1.

Regarding claim 36, Rawson discloses a fluid processing apparatus for use in an elongate passage, the apparatus comprising:

a plurality of operating devices for applying ultrasonic energy to fluid within the passage, wherein said operating devices are provided at different axial positions along the elongate passage, wherein axially adjacent operating devices are radially non-

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parallel and radially non-opposing. (Figure 7) The Examiner notes that the device in figure 7 discloses devices that are axially adjacent operating devices are radially non-parallel and radially non-opposing and also discloses devices that are opposing and parallel. The Examiner interprets the claim language comprising to be open ended and to include but not limit the claim to the limitations. Therefore the figure 7 meets the limitations even as it included unclaimed devices. (note the right side transducers or the left transducers separately)

Regarding claim 37, Rawson discloses an apparatus according to claim 36, but does not disclose wherein axially adjacent means for applying ultrasonic energy are relatively radial displaced by an angle between  $0^{\circ}$  and  $90^{\circ}$ . The Rawson reference does disclose that the transducers could be conveniently spaced uniformly around the circumference. (0018) *It would have been obvious to one of ordinary skill in the art at the time of the invention to radially displace the transducers by an angle between  $0^{\circ}$  and  $90^{\circ}$  since the Rawson reference discloses that the transducer can be located anywhere convenient.*

Regarding claims 38 and 39, Rawson discloses an apparatus according to claim 37, but does not disclose wherein the angle is from  $30^{\circ}$  to  $60^{\circ}$  or is substantially  $45^{\circ}$ . The reference does disclose the use of multiple ultrasound devices in convenient locations. (0018) *It would have been obvious to one of ordinary skill in the art at the time of the invention was made to discover or use the above angles, since it has been held that where the general condition exists in the prior art, it is within the ordinary skill of one in the art to discover the optimum or workable ranges.*

Regarding claim 40, Rawson discloses an apparatus according to claim 36, but does not disclose wherein it comprises five or more operating devices contained within the same elongate passage. The reference does disclose the use of multiple ultrasound devices (figure 7) and also that more could be used if necessary. (0018) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Rawson device by adding more operating devices, since it has been held that mere duplication of part is within the ordinary skill of one in the art. MPEP 2144.04

Regarding claim 41, Rawson discloses an apparatus according to claim 36, wherein alternate operating devices are radially aligned. (Figure 7)

Regarding claim 42, the Rawson reference discloses an apparatus according to claim 36, wherein the operating devices are radially symmetrically disposed either side of a line parallel with the longitudinal axis of the elongated passage, but does not disclose wherein the device comprises five operating devices. The reference does disclose the use of multiple operating units located in convenient locations. (Figure 7 and 0018) It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Rawson device by using 5 operating devices, since it has been held that mere duplication of parts is within the ordinary skill of one in the art. MPEP 2144.04

Regarding claim 44, Rawson discloses an apparatus according to claim 36, but does not disclose wherein axially adjacent means for applying ultrasonic energy are

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axially spaced by an amount from 30 to 40mm. The reference does disclose the use of multiple ultrasound devices in convenient locations. (0018) It would have been obvious to one of ordinary skill in the art at the time of the invention to have the ultrasonic device spaced apart 30 to 40 mm, since it has been held that mere relocation of parts is within the ordinary skill of one in the art.

Regarding claim 46, Rawson discloses an apparatus according to claim 36, wherein each operating device preferably comprises an operating member connected to a vibration member, the operating member being connected to a source of ultrasonic energy. (figure 7 and 0028-0029) The Examiner interprets the transducer to be the operating member and the vibrating member to be the vibrating member.

Regarding claim 47, Rawson discloses an apparatus according to claim 46, wherein the operating devices have an inner passage through which fluid flowing through the apparatus passes. (0029 and 0028 and figure 7)

Regarding claim 48, Rawson discloses an apparatus according to claim 46, wherein the inner surface of the inner is arranged to vibrate radial. (0029)

Regarding claim 49, Rawson discloses an apparatus according to claim 47, wherein the longitudinal axis of the inner passage of each operating device is substantially coincident with the longitudinal axis of the elongated passage. (Figure 7)

Regarding claim 55, Rawson discloses an apparatus according to claim 36, wherein each operating device comprises a vibration member having an inner passage. (0028-0029)

Regarding claim 66, Rawson discloses a method of treating fluids comprising placing a fluid processing apparatus into an elongate passage, and passing the fluid through the elongate passage;

wherein said fluid processing apparatus includes a plurality of operating devices for applying ultrasonic energy to fluid within the passage provided at different axial positions along the elongate passage, axially adjacent operating devices being radially non-parallel and radially non-opposing. (Figure 7 and 0029) The Examiner notes that the device in figure 7 discloses devices that are axially adjacent operating devices that are radially non-parallel and radially non-opposing and also discloses devices that are opposing and parallel. The Examiner interprets the claim language comprising to be open ended and to include but not limit the claim to the limitations. Therefore the figure 7 meets the limitations even as it included unclaimed devices. (note the right side transducers or the left transducers separately)

Regarding claim 68, Rawson discloses a method according to claim 66 herein the elongate passage is aligned substantially vertically. (Figure 7)

Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rawson as applied above in further view of Kelly WO 00/58224.

Regarding claim 56, Rawson discloses an apparatus according to claim 36, but does not disclose wherein the means for applying ultrasonic energy comprises an extender element for projecting an operating member into said elongate passage, said apparatus further comprising flushing means capable of flushing detritus from said



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extender element. The Kelly reference does disclose the use of an extender element (figure 1 #8) for projecting an operating member into said elongate passage, said apparatus further comprising flushing means capable of flushing detritus from said extender element. (Supply nozzle 5 for flushing means). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Rawson device with the Kelly reference by using the ultrasound device in the Kelly reference, since it is with the ordinary skill of one in the art to replace one type of ultrasonic device with a different known type of ultrasonic device to provide ultrasonic energy.

#### ***Allowable Subject Matter***

Claims 43, 45, 50-54, 59-63, 65 and 67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not disclose an apparatus wherein the use of the operating devices is independent. The prior art does not disclose a means for constraining the fluid flow toward the longitudinal axis of the elongated passage or that the outer conical surface is formed by an outer surface of a funneling device provided in the passage. The prior art does not disclose one or more nozzles are housed in a wall of a chamber through which the extender element projects or that the nozzles contain actuated valves or that the nozzles have controlled automatic response to a draw in power from the operating device. It does not disclose that the operating devices are arranged with their operating members along a

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common axis, adjacent extender elements being angularly offset with respect to one another. The prior art also does not disclose the method wherein the fluid is sewage sludge.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAMERON J. ALLEN whose telephone number is (571)270-3164. The examiner can normally be reached on M-Th 9-7pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CJA

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797